STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Phone: 860-594-3128

August 16, 2016

Project No. 301-170; Noroton Heights Railroad Station Platform Replacement in the Town of Darien.

NOTICE TO CONTRACTORS:

This is to notify all concerned and especially the prospective bidders that the bid opening for the subject project is currently scheduled for August 24, 2016 at 2:00 P.M. in the Conference Room of the Department of Transportation Administration Building, 2800 Berlin Turnpike, Newington, Connecticut.

Addendum No. 2 is attached

This Addendum is necessary to revise special provisions, revise CSI formatted specifications and revise plan sheets.

Pre-Bid Questions and Answers: Questions pertaining to DOT advertised construction projects must be presented through the CTDOT Pre-Bid Q and A Website. The Department cannot guarantee that all questions will be answered prior to the bid date.

H. J. Emonde
For: Gregory D. Straka
Contracts Manager
Division of Contracts Administration

AUGUST 16, 2016
NOROTON HEIGHTS RAILROAD STATION PLATFORM REPLACEMENT
FEDERAL AID PROJECT NO. N/A
STATE PROJECT NO. 301-170
TOWN OF DARIEN

ADDENDUM NO. 2

This Addendum addresses the following questions and answers contained on the "CT DOT QUESTIONS AND ANSWERS WEBSITE FOR ADVERTISED CONSTRUCTION PROJECTS":

Question and Answer Nos. 9, 11, 19, 20, 24, 25, 32, 33, 36, 37, 38, 41, 42, 43, 44, 45, 46, & 47.

SPECIAL PROVISIONS
REVISED SPECIAL PROVISIONS

The following Special Provisions are hereby deleted in their entirety and replaced with the attached like-named Special Provisions:

- NOTICE TO CONTRACTOR – CONSTRUCTION RESPONSIBILITY MATRIX
- ITEM NO. 0063521A – RAIL FACILITY UPGRADE SITE NO. 1
- ITEM NO. 0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

CSI SPECIFICATIONS
REVISED CSI FORMATTED SPECIFICATIONS

The following CSI Formatted Specifications are hereby deleted in their entirety and replaced with the attached like-named CSI Formatted Specifications:

- 09 61 40 – DETECTABLE/TACTILE WARNING SURFACES
- 09 67 10 – RAILROAD PLATFORM WATERPROOFING

PLANS
REVISED PLANS
The following Plan Sheets are hereby deleted and replaced with the like-numbered Plan Sheets:

02.01.A2
05.03.A2
05.06.A2
05.07.A2
05.18.A2
05.19.A2
05.20.A2
05.22.A2
05.30.A2
06.14.A2
06.15.A2
06.21.A2
06.27.A2

The Bid Proposal Form is not affected by this Addendum.

There will be no change in the number of calendar days due to this Addendum.

The foregoing is hereby made a part of the contract.

NOTICE TO CONTRACTOR – CONSTRUCTION RESPONSIBILITY MATRIX

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
GENERAL			
Railroad Protection and Outages	Capital Projects	Provide flagmen for any work that fouls the track or has potential to foul the track including protection for hi-rail mounted equipment.	Coordinate with MNR when flagmen are needed
		Coordinate Contractor's need for track outages with operations.	Coordinate with MNR for track outages.
		Coordinate Contractor's need for power outages with Power Department.	
		Inspect Contractor's rail-mounted equipment for safety items and operations on track.	
		Provide safety training to Contractor's personnel.	
Railroad Work Coordination	Capital Projects	Coordinate removal and installation of existing station advertising signage with Outfront Media	Remove and reinstall all station signage
Power System Protect and Outages	Power	Provide A-men for any work that affects or potential to affect the Traction Power or Overhead Catenary System.	Coordinate with MNR when A-men are needed. Perform any work that affects traction power or Overhead Catenary System.
		De-energize catenary and feeder system as required for work within 10' of wires	

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
Final Inspection	Capital Projects	Inspect railroad related work performed by contractor once work is substantially complete.	
PLATFORM REMOVAL/REPLACEMENT, ACCESS STRUCTURE REMOVAL/REPLACEMENT			
Structural, Architectural, Civil	Structural		Install temporary fencing, platform barricades and sediment control system
		Relocate Bridge Plates and bases at Noroton Heights Station during stage construction	
		Install Bridge Plates, bases and car markers at Noroton Heights, Rowayton and Dairen stations for track outages	
			Install Temporary Precast Concrete Barrier Curb (TPCBC)
			Install temporary support system of Hollow Tree Ridge Rd stairway
		Verify installation procedure and limits	Install protection system for ballast and tracks
		Dispose of removed recycling centers (removed by contractor)	Remove existing guardrails, handrails, benches, light poles VMS/PA system and recycling centers from the existing platforms, provide MNR removed recycling centers, store VMS panels
		Remove and dispose of railroad ties that have been used as part of the existing platform support systems.	Remove existing platform sections and access structures
			Assemble/erect platform sections
			Form and pour concrete overlay

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
			Apply railroad platform waterproofing
		Apply "Watch the Gap" to platforms	
			Assemble/form/erect access structures and substructures
			Install/erect temporary shelter
			Install/erect permanent shelter
		Install new recycling centers provided by Contractor	Install platform appurtenances (Handrail/Guardrail, benches, light poles, etc.) acquire new recycling centers
		Remove bridge plates and bases	
			Install concrete sidewalk
			Remove Barrier Temporary Precast Concrete Barrier Curb
			Restore existing pavement and grass areas disturbed by construction
Electrical	Power		Run electric conduit throughout platforms, acquire all power wire
			Relocate electrical panel located in the eastbound platform shelter
			Pull power wires through conduit on platform, catenary and pedestrian overpass for VMS/PA system and platform lighting
			Perform LED modifications to existing platform light poles and canopy lighting
			Purchase speakers for PA system.
		Oversee and inspect installation of system, tie-	Install grounding connections throughout station

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
		in to the catenary structures	Install grounding and bonding on platforms and all necessary appurtenances (guardrail/handrail, benches, recycling centers, etc), make temporary connection to previously installed grounding system during stage construction
			Perform final connections of complete station grounding and bonding system throughout entire station except final connections to existing catenary structures
		Witness final testing of grounding and bonding	Perform final testing of Grounding and Bonding
Communications Systems	Communications	Perform disconnect of power and communication wires to PA system	
		Perform disconnect of power and communications wires to VMS system.	
		Acquire all CAT. 6 communication wire.	Run communication conduit throughout platforms.
		Pull communication wires through conduit installed on platform, catenary and pedestrian overpass for VMS system.	Acquire and pull communication wires through conduit installed for PA system.
		Final tie-in of power and communication wires to PA system and VMS system	
		Final tie-in of power and communication wires for VMS/PA system to existing panel	
		Perform final testing of VMS and PA system	

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
TVM RELOCATION			
Structural, Architectural, Civil	IT	Relocate TVMs to temporary location, anchor to slab	
		Move TVMs back to permanent platform location	
	Structural	Acquire conduits for temporary proposed power and communication conduit runs, with necessary wires.	
			Install concrete slab
			Install/erect shelter for TVMs
			Remove shelter and anchorage
Electrical	Power	Run temporary conduits for power to temporary location of TVMs	
		Pull power wires through installed temporary conduit	
		Removed temporary conduit for power and wires.	
Communications Systems	Communications	Run temporary conduits for communication to temporary location of TVMs	
		Pull communication wires through installed temporary conduit	
		Remove temporary conduit for communication and wires	

Activity	MNR Department	MNR Responsibilities	Contractor's Responsibilities
Electrical	Power/C&S	Perform connection to TVMs at temporary location and tie-in to existing panel	
		Disconnect temporary power and communication wires from TVMs in temporary location	
		Reconnect TVMs to existing power and communication lines on platform.	
MNR HARDLINE PLATFORM TELEPHONES			
Structural, Architectural, Civil	Structural		Place additional conduit to end of platforms for MNR phones
			Coordinate placement of telephone pole on platform with MNR, perform drilling through platform for conduit.
Communications Systems	Communications	Acquire telephones with all necessary equipment	
		Install telephones and poles	
		Pull communication wires through placed conduit	
		Perform test of system	

ITEM #0063521A – RAIL FACILITY UPGRADE (SITE NO.1)

Description:

Under this item, the Contractor shall complete the elements of work (architectural, structural, and communications) that make up the Major Lump Sum Item (MLSI), as depicted in this specification, the NOTICE TO CONTRACTOR – RAIL FACILITY UPGRADE (SITE NO. 1), the Contract Plans, and the CSI-formatted specifications. Refer to Form 816 Article 1.20 - 1.02.04 for additional information in this regard.

All the CSI-formatted specifications contained in the contract documents apply to the Major Lump Sum Item (MLSI).

The following elements of work constitute the MLSI:

- Removal and salvage of existing architectural elements, including platform benches, platform recycling bins, station signage, existing metal guard rail and handrails with associated hardware and connections, bridge plates, and existing lighting.

- Demolition of existing eastbound and westbound railroad concrete double-tee platforms, concrete ramps and stairs (full/partial), and temporary concrete double-tee platform.

- Modifications to existing platform piers, including concrete patching, crack repair, and bearing pedestals.

- New eastbound and westbound railroad platform sections, including bearings, structural steel and fasteners, precast platform panels, microsilica concrete overlay, platform waterproofing, detectable/tactile warning surfaces, joints, and rub rail.

- New stairways and ramps, including supporting substructure elements.

- Installation of architectural elements, including site furnishings, permanent shelter, temporary shelters, guard rail, hand rails, stair treads, joint sealants, and station door.

- Electrical work including VMS and PA speakers; removing and replacing light poles with LED retrofit; relocation of eastbound panel; and installation of unit heater in the station building.

Structure excavation, compacted structural fill, dewatering, excavate handling/disposal, and other related items of work associated with constructing the above MLSI elements items are not part of the MLSI.

Any work incidental to another bid item which is not specifically described or included in the bid item, but which is required for performance and completion of the work required under the Contract, shall be considered to be included under this item.

Materials:

All materials shall be as required by the Contract Plans and as described in the CSI-formatted Specifications that make up this MLSI.

Construction Methods:

All methods of construction shall conform to the requirements stipulated in the CSI-formatted Specifications that make up the MLSI.

Method of Measurement:

This item will be paid for at the contract lump sum price for "Rail Facility Upgrade (Site No. 1)" complete.

Basis of Payment:

This item will be paid for at the contract lump sum price for "Rail Facility Upgrade (Site No. 1)", which price shall include all administrative and procedural requirements, material, equipment, labor, and work incidental thereto.

Pay Item	**Pay Unit**
Rail Facility Upgrade (Site No. 1)	L.S.

ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description is supplemented by the following:

The Contractor shall maintain and protect traffic as follows and as limited in the Special Provision "Prosecution and Progress":

HOLLOW TREE RIDGE ROAD, HEIGHTS ROAD, LEDGE ROAD, AND NOROTON AVENUE

The Contractor shall maintain and protect the existing number of lanes of traffic, including turning lanes, on Hollow Tree Ridge Road, Heights Road, Ledge Road, and Noroton Avenue.

PASSENGER DROP-OFF AREA AND PARKING LOT TO THE NORTH OF TRACKS

The Contractor shall maintain and protect the existing travel way and parking spaces within the passenger drop-off area to the north of the tracks.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor may close the western-most entrance to the one-way drive at Heights Road. At the same time, in order to protect and maintain the entering vehicular traffic flow to the parking lot located east of the drop-off area, the Contractor shall direct incoming vehicular traffic through the drop-off area exit (middle curb cut) located at Heights Road.

PARKING LOT TO THE SOUTH OF TRACK 4

The Contractor shall maintain and protect the existing travel way and parking spaces within the parking lot located to the south of Track 4. A number of existing paved parking spaces adjacent to the platform will be reserved for Contractor use during construction, at which time the Contractor will maintain a 24-foot minimum travel way between the edge of his work zone and the adjacent northern line of central parking spaces.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor may reserve during off-peak hours specific parking spaces in the parking lot for truck deliveries, and for the maneuvering of construction vehicles, as indicated in the contract plans. During this period, construction vehicles shall access and exit the parking area via the entrance/exit location at Ledge Road, at the southeastern corner of the parking lot. The Contractor shall be responsible for the method and materials used to reserve the allowable spaces. Costs for this work and associated materials shall be included in the cost for Maintenance and Protection of Traffic.

PEDESTRIAN ACCESS

Pedestrian access shall be maintained to all open platforms in accordance with the Maintenance and Protection of Traffic Plans, to allow for the safe passage of pedestrians during all construction phases with the following exception: The westbound platform will be closed for access during specific off-peak times. The access to the pedestrian overpass will be secured at different locations coming from the eastbound platform. A small section of sidewalk will also be constructed on the northern half of the station to allow platform access during staged construction. Please refer to pedestrian detour as detailed in the plans.

Construction barricades shall be provided along the railroad platforms at locations indicated in the contract drawings, for the protection of pedestrians during construction activities.

Temporary pedestrian crosswalks to provide pedestrian safety will be placed in two different locations in the parking lot to the south of track 4.

Article 9.71.03 - Construction Method is supplemented by the following:

SIGNING

The Contractor shall maintain all existing overhead and side-mounted signs throughout the project limits during the duration of the project. The Contractor shall temporarily relocate existing signs, temporary signs, and sign supports as many times as deemed necessary as shown on the Maintenance and Protection of Traffic Plans and as directed by the Engineer. The Contractor shall install temporary signs, sign supports, and foundations as called for in the Maintenance and Protection of Traffic Plans and as directed by the Engineer.

The temporary relocation of all signs and side-mounted supports shall be paid for under Item #0971001A – Maintenance and Protection of Traffic. The furnishing, installation, and removal of temporary side-mounted sign supports, and foundations shall also be paid for under Item #0971001A - Maintenance and Protection of Traffic. Unless they are adequately protected by guide rail or barrier, temporary side-mounted supports shall be breakaway supports conforming to specifications and details contained elsewhere in the contract.

Temporary signs, temporary overlay panels, and the temporary sign faces for side mounted and overhead signs shall be paid for under Item #1220027 - Construction Signs. The type of material, the type of sheeting, and the color of the sheeting for the temporary signs, temporary overlay panels, and temporary sign faces for side mounted and overhead signs shall be submitted to the Engineer for approval.

The Contractor may not install temporary sign posts in sidewalks. The Contractor must utilize existing sign posts, grassy areas or portable sign supports for the installation of temporary signing in areas of existing sidewalks.

CONSTRUCTION BARRICADES

At least 30 days prior to undertaking any work, the Contractor shall submit to the Engineer for review and approval all temporary construction barricades for use along the railroad platforms, at locations indicated in the contract drawings, for the protection of pedestrians during construction activities. No work shall begin until such plans have been approved by the Engineer.

REQUIREMENTS FOR WINTER

The Contractor shall schedule a meeting with representatives from the Department, including Maintenance and Traffic, and the Town to determine what interim traffic control measures the Contractor shall accomplish for the winter to provide safety to the motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year. The contractor shall be responsible for snow removal within construction stage limits of parking lot and platforms under construction. Snow removal for all other areas of the station including new and existing sidewalks, operational platforms and access structures, operational parking lot areas, and all active temporary structures shall be performed by the Town of Darien.

SIGNING PATTERNS

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

SECTION 1. WORK ZONE SAFETY MEETINGS

1.a) Prior to the commencement of work, a work zone safety meeting will be conducted with representatives of DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the project. Other work zone safety meetings during the course of the project should be scheduled as needed.

1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. Any issues that can't be resolved at these meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda should include:

- Review Project scope of work and time
- Review Section 1.08, Prosecution and Progress
- Review Section 9.71, Maintenance and Protection of Traffic

- Review Contractor's schedule and method of operations.
- Review areas of special concern: closed platforms, pedestrian detours.
- Open discussion of work zone questions and issues
- Discussion of review and approval process for changes in contract requirements as they relate to work zone areas

SECTION 2. GENERAL

2.a) If the required minimum number of signs and equipment are not available, the traffic control pattern shall not be installed.

2.b) Failure of the Contractor to have the required minimum number of signs, personnel and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for loss time.

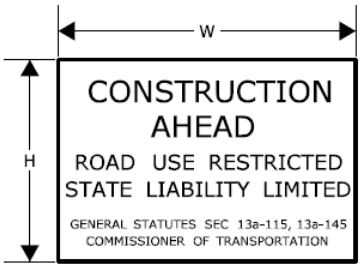
2.c) In cases of legitimate differences of opinion between the Contractor and the Inspection staff, the Inspection staff shall err on the side of safety. The matter shall be brought to the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

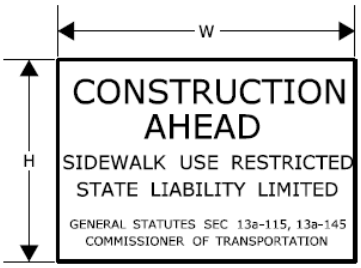
3.a) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.

3.b) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.

SERIES 16 SIGNS



		W H
16-E	80-1605	84" x 60"
16-H	80-1608	60" x 42"
16-M	80-1613	30" x 24"



		W H
16-S	80-1619	48" x 30"

THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

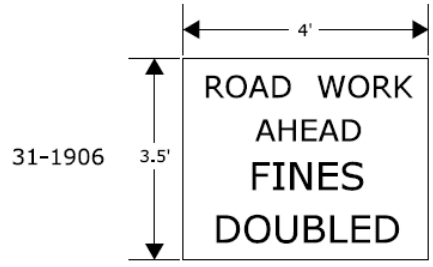
REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

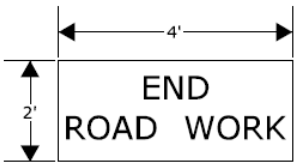
THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHERE THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.





SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
REQUIRED SIGNS

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 11:35:43-04'00'
PRINCIPAL ENGINEER

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.

2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.

3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.

4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.

5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).

8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

10 SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

METRIC CONVERSION CHART (1" = 25mm)

ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:50:35-04'00'
PRINCIPAL ENGINEER

Article 9.71.05 – Basis of Payment is supplemented by the following:

The temporary relocation of signs and supports, the furnishing, installation and removal of any temporary supports, and the furnishing, installation and removal of the construction barricades along the railroad platforms, at locations indicated in the contract drawings, shall be paid for under the item "Maintenance and Protection of Traffic". Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

SECTION 09 61 40 - DETECTABLE / TACTILE WARNING SURFACES

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall provide all labor, materials, equipment and services necessary for and incidental to, furnishing and installing surface mounted tactile warning surface as shown on the drawings and as specified herein.

B. This Section specifies furnishing and installing a surface mounted in-line dome tactile warning surface on new concrete platforms, as indicated on the Drawings. The Work also includes required coordination of the Work with work of other Sections, surface/substrate preparations, and tactile warning system installations, and includes coordination with and transitions to adjacent systems and surfaces, complete. The Work also includes such related and accessory work as may be required for the successful completion of the Work of this Section.

C. Related Documents

1. Drawings and general provisions of the Contract, including General and Special Provisions, apply to this Section.

D. Correlation of Contract Documents

1. Refer to General and Special Provisions for additional requirements affecting the interpretation of Drawings and Specifications and affecting the Work of this Section.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance, including appropriate Material Safety Data Sheets (MSDS).

B. Samples for Verification Purposes: Submit three (3) samples of full size surface mounted in-line dome tactile warning surface, of the kind proposed for use, with all installation accessories required for the project.

C. Shop drawings are required for products specified showing fabrication details; panel surface profile; composite structural system; plans of panel placement including joints; and material to be used as well as outlining installation materials and procedure.

D. Material Test Reports: Submit test reports from qualified independent testing laboratory indicating that materials proposed for use are in compliance with requirements and meet the properties indicated. All test reports shall be conducted on a surface mounted tactile panel system as certified by a qualified independent testing laboratory.

E. Maintenance Instructions: Submit copies of manufacturer's specified maintenance practices for each type of tactile panel and accessory as required.

1.3 QUALITY ASSURANCE

A. Provide surface mounted in-line dome tactile panels and accessories as produced by a single manufacturer.

B. Installer's Qualifications: Engage an experienced Installer trained and certified in writing by tactile surface manufacturer as qualified for installation, who has successfully completed installations similar in material, design, and extent to that indicated for Project. Manufacturer's supervisor shall be present at all times.

C. Americans with Disabilities Act (ADA): Provide tactile warning surfaces which comply with the detectable warnings on walking surfaces and platform edge detectable warnings, section of the Americans with Disabilities Act, latest version.

D. All applicable building codes, latest versions.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in sealed, undamaged containers with labels intact and legible, indicating the material name, date of manufacture and lot number.

B. Store materials in a dry location at temperatures not exceeding 90° F, or lower than 35° F.

1.5 SITE CONDITIONS

A. Environmental Conditions and Protection: Maintain minimum temperature prior to installations, during installation, and after completion of installation in strict compliance with the manufacturer’s written instructions.

1. All materials individually or mixed shall have zero volatile organic content.

2. Do not apply materials if rain is anticipated within three hours of application.

3. Substrate and air temperature must remain above 40° F for at least 4 hours after application of materials and remain above freezing for 24 hours.

4. All materials are non-hazardous and Class A fire-rated.

B. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction.

C. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the passengers or public. Provide barricades or screens to protect passengers or public.

D. Disposal of any liquids or other materials of possible contamination shall be made in accordance with federal state and local laws and ordinances.

E. Cleaning materials shall have code acceptable low VOC solvent content and low flammability if used on the site.

F. Coordinate phasing and flagging personnel operations as specified elsewhere.

1.6 GUARANTEE

A. The certified applicator and the manufacturer shall provide the Owner with a five (5) year joint guarantee on the products, specification and installation

1.7 MAINTENANCE

A. Wash with soap and water with a bristle brush or pressure washer of 1000 psi.

B. Chemical spills should be removed to avoid possible damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Project standard of quality for the surface mounted Tactile Warning Surface materials, chemical composition, fabrication, appearance, color, performance, installation and warranty is based on: Strongwarn SWADA-1000/2000, Detectable Warning Surfaces, manufactured by Strongwall Industries Inc., 107 Chestnut Street, Ridgewood, New Jersey 07450, (201-445-4633). Existing engineered ADA and field tested products which are subject to compliance with requirements, may be incorporated in the work and shall meet or exceed the specified test criteria and characteristics.

1. Color: Canary Yellow conforming to Owners standards. Sample of colors shall be submitted to Owner and the Engineer for review.

B. Alternate product: Provide CRYL-A-FLEX TWS Tactile Warning Strip, as manufactured by DUR-A-FLEX, Inc., 95 Goodwin Street, East Hartford, Ct. 06108 (800-253-3539).

C. Or approved equal.

2.2 MATERIALS

A. #82 Truncated Dome: A blend of carboxylated latex emulsion with a factory apportioned powder catalyst. #82 is injected, or hand applied, onto the mold array, to form the required tactile warning surface.

B. One 5 gallon pail #82 liquid and eight 32.5lb bags of #82 powder form one unit. Average yield, Domes: SWADA-1000/2000- 400 square feet per unit.

1. Mixing Ratio: 5.5 quarts (maximum) of #82 latex emulsion and two 32.5 lb bags of #82 catalyst powder. Micro-adjust in the field, for the quantity of liquid used, to achieve optimum handling.

C. #32 Field: A two-component blend of latex vinyl copolymer with a factory apportioned catalyst powder and pigments, which is used to form the required field.

1. Mixing Ratio: One 5-gallon pail of #32 Emulsion and two 55-lb bags of #32 Catalyst Powder form one unit.

2. Average Yield: 400 square feet of field. One coat at 30 mils wet.

D. #4 Pigmented Sealer: Used to enhance color quality, it is applied directly from the container. #4 will yield 700 square feet per 5-gallon pail. Stir for 30 seconds and apply with a long nap roller or brush. Apply in two coats

2.3 SUPPLEMENTAL MATERIALS

A. EM-100-N Crack Treatment Component: Elastomeric rubber emulsion.

B. Strongcrete SW-81: SBR modified structural repair mortar material.

C. Cleaning agent: Water

2.4 EQUIPMENT

A. Flexible and reusable molds

B. Strongwarn material injector

PART 3 - EXECUTION

3.1 EXAMINATION

A. Concrete:

1. Inspect the top surface of the substrate. Perform all necessary substrate repairs and remove laitance, grease, oil, paint and other contaminants, which will affect system adhesion.

2. Commencement of system installation only implies the acceptance of the top surface, as suitable to accept the system.

3.2 PREPARATION

A. Equipment options:

1. Shotblast or scarify, and vacuum so that the surface is clean, then water blast machine capable of delivering a minimum water pressure of 4000 psi to the substrate.

B. Procedure

1. Make as many passes as required with shotblast or scarifying machine and vacuum surface clean.

2. Pretreat areas of oil drippings with a penetrating oil remover and rinse. Spray concrete deck with HD cleaner, allow to soak for 30 minutes without drying, and water blast with 4000 psi.

3.3 APPLICATION

A. #82 Truncated domes:

1. Mixing:

    a. Place #82 Emulsion in an appropriate size container. Add the appropriate amount of #82 Catalyst Powder, while mixing continuously with a paddle mixer and a heavy duty slow speed (400-600 rpm) drill. Continue mixing until uniform mixture consistency is achieved, but, do not mix for more than 2 minutes. Mixture working time is 20 minutes at 70°F.

2. Placement:

    a. With clean water, dampen concrete and all porous substrate surfaces to a dull finish. Immediately place mold segments onto the work area.
    b. Place #82 mixture onto the molds using a squeegee and a trowel, to help work the material into the mold openings and remove excess material from exposed surfaces of the molds.
    c. Caution: Do not touch or move the mold, since it may break the bond.
    d. #82 mixture must be cured sufficiently to resist pressure with index finger before mold segments can be removed without causing damage.

3. Minimum Curing Time:

    a. 45°F - 55°F allow to cure for 12 hours minimum.
    b. 55°F - 70°F allow to cure for 6 hours minimum.
    c. Above 70°F allow to cure for 3 hours minimum.
    d. Do not apply at temperatures below 45°F

B. #32 Field: (two coats required)

1. Mixing:

    a. Stir #32 Emulsion for about 30 seconds using a heavy-duty drill and a Jiffy blade.
    b. Pour #32 Emulsion into a clean container. Gradually add #32 Catalyst Powder, mixing continuously as the powder is added. Never reverse this procedure.
    c. After all powder has been added, continue mixing for a minimum of three minutes until the materials form a lump-free mixture. The pot life at 70°F is approximately 25 minutes. Do not attempt to remix or use any material that has begun to set.

2. Application:

    a. With clean water, dampen concrete and all porous surfaces to a dull finish.
    b. Apply mixture with a long nap roller and allow to cure for one hour (minimum) at 70°F prior to application of additional coats.

C. #4 Sealer (two coats required)

1. Stir material for 20 seconds using a heavy drill and a Jiffy blade.

2. Apply to a dry #32 surface with a long nap roller. Allow to cure for one hour (minimum) at 70°F prior to application of additional coats.

3. Allow to cure overnight before accepting traffic.

3.4 INSTALLATION

A. During all procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

B. The specifications of the tactile warning surface and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers.

C. Prior to placement of the surface mounted system, the manufacturer’s shop drawings shall be reviewed and a layout drawing prepared by the installation Design-Builder to resolve the issues related to pattern repeat, tile cuts, expansion joints, control joints, platform curves, platform end returns and platform surface interferences.

D. During and after the warning surface installation and the curing stage, it is imperative that there is no walking, leaning or external forces placed on the warning surface. The Design-Builder shall provide adequate protection of the work areas completed.

3.5 CLEANING AND PROTECTING

A. Protect warning surface against damage during construction period to comply with tactile warning surface manufacturer's specification.

B. Protect warning surface against damage from rolling loads following installation by covering with plywood or hardwood.

C. Clean tactile warning surface not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean tactile warning surface by method specified by manufacturer.

3.6 DEMONSTRATION / TRAINING

A. Instruct Owner's personnel in proper use, operations, and maintenance of tactile warning surfaces. Review and instruct Owner’s selected personnel in the use of all necessary equipment to properly install or repair tactile warning surfaces. Train Owner's personnel in procedures to follow in identifying sources of installation failures and emergencies associated with the improper use, storage or handling of all materials.

END OF SECTION 09 61 40

SECTION 09 67 10 – RAILROAD PLATFORM WATERPROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work under this item consists of all work shown on the plans to prepare the surfaces of, and apply a waterproofing system to, the proposed microsilica concrete overlay of the new eastbound and westbound platform sections -- full length and full width. “Watch the Gap” signage shall be installed (by others) on the new platform surfaces (near the track-side edges) at the locations shown on the plans.

B. The work under this item also includes all work shown on the plans to mill and apply a waterproofing system to the existing platform landing area surfaces identified on the plans.

C. The waterproofing system shall be a spray applied, fast cure, high-build polymer system with a broadcast aggregate for skid resistance and a top sealer coat.

D. The color and texture of the waterproofing system and signage products shall be as approved by the Engineer. The products shall be applied to the prepared platform areas as defined in the plans in strict accordance with the Manufacturer’s recommendations.

1.2 SUBMITTALS

A. The contractor shall submit proposed product data sheets for the waterproofing system and the signage skid resistant system, surface preparation procedures, installation procedures, two sample coupons (4”x4”) that are representative of the finished surface, texture and colors, and Material Safety Data Sheets for approval.

B. Copies of the Material Safety Data Sheets for all products used shall be kept on site and made available to personal performing the work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. The waterproofing system shall be the following or an approved equal:

1. Top Coat
   Manufacturer: Bridge Preservation, LLC
   686 S. Adams St.
   Kansas City, KS 66105
   Tel: 913-321-9000

B. Provide a waterproofing system that meets or achieves all of the following requirements:

1. For the Multi-Component Polymer Primer:
   a. Gel Time > 5 minutes
   b. Tack Free Time < 2.5 hours at 77°F or below
   c. Adhesion to Concrete > 150 psi (per ASTM D 4541)

2. For the Base Coat of Spray Applied Waterproofing Membrane, Rapid Curing Elastomer:
   a. Gel Time < 10 seconds
   b. Cure Time < 30 seconds
   c. Tack Free Time < 30 minutes
   d. Shore Hardness > 40D per ASTM D 2240
   e. Adhesion to Concrete > 150 psi per ASTM D 4541
   f. Tensile Strength > 2,000 psi per ASTM D 638
   g. Elongation at Break > 150% per ASTM D 638
   h. Crack Bridging Ability Pass at 40 Cycles per ASTM C 836
   i. The surface thickness that is applied on the platforms shall be at least the same thickness as that used for the tests above.

3. For the Spray Applied Aggregate Membrane, Rapid Curing Elastomer:
   a. Open to Light Traffic 1 Hour
   b. Gel Time > 30 seconds
   c. Tack Free Time > 5 minutes
   d. Tensile Strength > 2,000 psi per ASTM D 638
   e. Elongation at Break > 150% per ASTM D 638
   f. Crack Bridging Ability Pass at 40 Cycles per ASTM C 836
   g. The surface thickness that is applied on the platforms shall be at least the same thickness as that used for the tests above.

4. Broadcast aggregate shall consist of clean, hard (Moh's hardness range 6 to 7), dry, rounded, non-angular aggregate meeting the following gradation:

Fine Mesh Aggregate					
Fine Mesh	#10	#16	#20	#30	#50
% Passing	98-100	30-45	8-18	2-10	0-2

5. For the Aliphatic Coating Top Coat:
   a. Gel Time > 20 minutes
   b. Tack Free Time 1 hour
   c. Shore Hardness 60-65 D per ASTM D 2240
   d. Tensile Strength 3,500 – 4,500 psi per ASTM D 638
   e. Elongation 2.5 – 5 % per ASTM D 638
   f. Taber Abrasion 39 mg loss per ASTM D 4060

PART 3 - EXECUTION

3.1 CONSTRUCTION METHODS

A. The contractor shall provide the services of a technical representative of the manufacturer. This representative shall be on the project site at the start of the waterproofing-related work and remain until released by the Engineer. The representative shall provide advice on prepping, mixing, and placing the waterproofing system products. The technical representative, upon consultation with the Engineer, may suspend any item of work that is suspect and does not meet the requirements of this specification. Resumption of work will occur only after the manufacturer's representative and the Engineer are satisfied that appropriate remedial action has been taken by the contractor.

B. The contractor shall submit for review a detailed, written sequence and procedure for performing the waterproofing-related work in accordance with the plans and the NOTICE TO CONTRACTOR - WORK ON RAILROAD PROPERTY.

C. The application of the waterproofing system to the new platform sections shall be accomplished in uninterrupted sections between platform "expansion joints" in accordance with the plans and the NOTICE TO CONTRACTOR - WORK ON RAILROAD PROPERTY.

D. The application of the waterproofing system to the new platform sections shall be done before both the "tactile warning strips" and the platform "concrete overlay joints" are installed.

E. Application of the waterproofing system to the new platforms shall take place immediately after the microsilica overlay surface has been prepared, i.e. made free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products; and prior to any public access being granted to that portion of platform.

F. Application of the waterproofing system to the existing platform landing areas indicated on the plans shall take place immediately after the existing surface is milled, shotblasted, or ground and prior to any public access being granted to that landing area. Surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Shotblasting, grinding, or milling shall be used to provide a sound substrate free from laitance. The surface profile is not to exceed 1/8" (3 mm) (peak to valley).

G. If required, degreasing of surfaces to receive the waterproofing system shall be performed via detergent washing in accordance with ASTM D4258.

H. All waterproofing system related work, including shotblasting, grinding, and milling operations for the platform landing areas shall cease prior to a train entering the station on an adjacent track, to prevent damage to the train and injury to commuters. Sufficient distance between the surface preparation process and waterproofing system application shall be provided to prevent any injury or discomfort to commuters on the platform or train. Vacuum shotblasting is anticipated as a means to minimize the spread of debris.

I. Remove excess loose aggregate prior to applying the final top binder surface. Apply an aliphatic coating for the top binder surface, or an approved equal, to lock the aggregate into place. The material type and cure time shall be chosen so as to meet the maximum closure windows required by the plans and the NOTICE TO CONTRACTOR - WORK ON RAILROAD PROPERTY.

J. If an area is left untreated or the binder becomes damaged, a patch repair shall be carried out to restore the integrity of the system. The damaged area shall be cut back to sound material and wiped with solvent (e.g. acetone) up to a width of at least 4" on the periphery. The area shall then be repaired using the same procedures and steps to restore a uniform, continuous appearance. One coat of sealer shall be applied with a 4" minimum overlap onto the existing area.

END OF SECTION 09 67 10